Abstract

A crawler device for traversing in a confined environment, searching victims or inspecting defections, comprises an elongated flexible drive shaft extending along a central axis between a proximal end and a distal end, a motor operatively connected to the drive shaft for turning the drive shaft, and a plurality of segments disposed over the drive shaft. Any two adjacent segments are joined by an articulate joint. Each segment has a wheel assembly including drive wheels. At least two segments further include a gear assembly operatively connecting the wheel assembly to the drive shaft. Turning the drive shaft provides distributed traction force to the drive wheels of the at least two segments, and thereby drives the crawler device.